this principle to the large number of phenomena in aqueous solutions which so well illustrate the laws of chemical equilibrium.

The student who depends upon this textbook may acquire a large number of useful chemical facts. He will be attracted by the lucidity and stimulated by the enthusiasm of the author, but he will nevertheless be seriously handicapped when in any field of chemical endeavor he enters into competition with men who are trained in the use of all the tools of modern chemistry. GILBERT N. LEWIS

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Iagttagelser over Entoparasitiske Muscidelarver hos Anthropoder. Af I. C. NIELSEN. Copenhagen. 1909. Entomologiske Meddelelser, R. 2, Bd. 4 (1909), with 4 plates.

THE above paper consists of 110 pages in Danish of investigations of muscid-larvæ entoparasitic on arthropods, exclusive of careful explanations in both English and Danish of the plates and over five pages in English giving a summary of the more important results announced. It shows much painstaking work, and the author is to be highly commended on the very valuable results obtained.

After reviewing the greater part of the literature, eight species are treated in detail, descriptions and figures being given of the maggot stages and puparia, to which are added many data on host relations. The one great feature of the work is the establishing of definite characters in the pharyngeal skeleton of the eight species studied, whereby the maggot stages can be accurately determined. It is reasonable to suppose that the characters given by the author will hold good through a large part of the superfamily Muscoidea. Excellent figures are given of the pharyngeal skeleton in its different stages, and the author is undoubtedly correct in assuming that there are but three maggot stages in the majority of the Muscoidea. Some exceptions to this rule may yet be found, though it must be admitted that the probability of such is remote. Investigations carried on by the bureau of entomology at the gipsy moth parasite laboratory in Massachusetts indicate that much further study of the subject is needed.

The spiracles of the maggot, both anterior and posterior, have been carefully studied and figured by the author. The determinations of the eight species above mentioned were made with the aid of Mr. H. Kramer, the German specialist in Tachinidæ. I can only say that two of them, *Tachina larvarum* Linn. and *Carcelia gnava* Meig., are not the species handled by us under those names at the laboratory, and we have the authority of Drs. Kertesz and Handlirsch for our determinations. Nielsen's *larvarum* deposits maggots, while ours deposits eggs. As further evidence that we are right, we know that the American and Japanese species of *Tachina* deposit eggs. The anal stigmata of the puparia of our *larvarum* and *gnava* differ conspicuously from those figured by Nielsen under these names. These points only show the difficulty of arriving at uniform determinations in the Tachinidæ with our present knowledge; careful study and comparison of types, even of the most common species, must be made.

Another point of importance brought out in the paper is the fact that the chitinous funnel of the maggot is not an actual part of the latter's integument, but is formed to a large extent from the integument of the host. The author shows that this funnel is present in all three stages of the maggot of certain species, but we know that other species are without it in the first stage.

Doctor Nielsen is certainly mistaken in believing that *Compsilura concinnata* does not penetrate the skin of the caterpillar with its piercer at the moment of larviposition. Our investigations, including actual observation of the living flies and dissection of both flies and hosts, prove conclusively that such penetration takes place. There is a considerable group of species, both European and American, that have this habit. Mr. William R. Thompson has recently secured thorough demonstration of the fact with *concinnata* at the laboratory, thus verifying conclusions arrived at from a

study of the anatomy of the parts, supplemented by observation of the females and rearing of the species during three consecutive seasons.

A most interesting chapter is included on the economic value of Tachinidæ, in which it is shown that these flies, unaided by other parasites, have entirely wiped out considerable colonies of lepidopterous larvæ in Denmark.

It is greatly to be hoped that Dr. Nielsen, and other students as careful and painstaking as he, will carry on further investigation of the early stages of Muscoidea.

I have to thank Dr. L. O. Howard, chief of the bureau of entomology, for having an English translation of Dr. Nielsen's paper made for me. This translation was done by Mr. August Busck, and it is hoped that it can be published in the near future for the benefit of students not familiar with Danish.

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The Autobiography of Sir Henry Morton Stanley, G.C.B. Edited by his wife, Dorothy Stanley. Pp. xvii + 538. Sixteen photogravures and a map. Boston and New York, Houghton Mifflin Company. 1909. $5 net.

One of the greatest of modern geographers has called Henry M. Stanley the Bismarck of Africa. This was his due because of the great part he took in the solution of the many difficult problems of that continent.

The son of James Rowland, born in 1841, at Denbigh, in Wales, his early life was a succession of serious and discouraging struggles. In fact, nearly his whole life was marked by this struggle with his fellow men. Even after success had crowned him, there were always to be found those who not only doubted and opposed him, but did so to the extreme of malice.

From the time when he was cast off by his own people he may have been the child of fortune, but it was always hard to realize that such was the case; perhaps this early buffetting was the means of developing that self-reliance which was his marked characteristic through life. Neglected by his family, his early training in the poor-house certainly can not be considered as the most favorable condition for beginning a career.

The first chapters of this volume were prepared by Stanley himself, the latter portion of the work, however, is the kindly work of his talented wife, who has filled in with marked skill the blanks in his rather fragmentary journals by abstracts from his publications.

One is constantly struck during the perusal of the first part of the book by the intensely devout attitude of Stanley's mind, and his sincerity and singleness of purpose. His mental activity was curiously in contrast with his surroundings, and he was most fortunate in his early contact with Mr. Stanley, the man to whom he owed most of his serious convictions as well as his name. Would that there were more men capable and willing to throw such helpful and sturdy influences for good about the needy youth of to-day; whether it would be accepted by them or not is, of course, an open question. Stanley accepted them, however, and prospered under this guidance.

Thrown again upon his own resources by the death of his best friend, he soon became a wanderer, serving in the southern army, later a prisoner of war, then in the northern navy. At the close of the war his career as correspondent began, and he traveled extensively, inspiring confidence in his energy and capability until the New York *Herald* opened the door to his future work.

Of this work the estimate of the great Petermann, was "that he had done more than all the scientific travelers in Africa for eighty years previous, more than the Arabians for a thousand years, and that he had no equal among the 'discoverers' of the earth." This was high praise, but the physical exertions which won these words and brought him home a gray-haired man did not dampen his zeal, and when the time came to finish the work of Livingstone, he was ready for the task.

Stanley undoubtedly lived ahead of his time, but time has caught up with him, and the real